

WHAT IS CLAIMED IS:

1. A method of producing a flowable composition that sets into a calcium phosphate containing product, said method comprising:
5 combining:
 (a) a setting fluid;
 (b) dry reactants comprising a calcium source and a phosphate source;
and
 (c) an osteoclastogenic agent;
10 in a ratio sufficient to produce said flowable material.
2. The method according to Claim 1, wherein said setting fluid comprises said osteoclastogenic agent.
- 15 3. The method according to Claim 1, wherein said dry reactants comprise said osteoclastogenic agent.
4. The method according to Claim 1, wherein said osteoclastogenic agent comprises a modulator of the RANK mediated osteoclastogenesis induction
20 pathway.
5. The method according to Claim 4, wherein said mediator is an ligand for RANK.
- 25 6. The method according to Claim 5, wherein said ligand for RANK is a RANKL polypeptide or mimetic thereof.
7. The method according to Claim 4, wherein said ligand is a RANKL polypeptide.

30

8. The method according to Claim 7, wherein said RANKL polypeptide is a human RANKL or a RANK binding fragment thereof.

9. The method according to Claim 6, wherein said ligand is a small molecule mimetic of RANKL.

10. The method according to Claim 1, wherein said ratio ranges from about 0.2:1 to 0.7:1.

11. The method according to Claim 10, wherein said flowable composition is a paste.

12. The method according to Claim 1, wherein said setting fluid is a solution of a soluble silicate.

13. The method according to Claim 1, wherein said flowable composition sets into said calcium phosphate containing product in a period of time ranging from about 5 to 10 minutes.

14. The method according to Claim 1, wherein said calcium phosphate containing product has a compressive strength ranging from about 25 to 100 MPa.

15. A method of producing a paste that sets into a calcium phosphate containing product, said method comprising:

(a) combining:

(i) dry reactants comprising a calcium source and a phosphate source;

(ii) a setting fluid; and

(iii) an osteoclastogenic agent;

wherein said dry reactants, setting fluid and osteoclastogenic agent
are combined in a ratio sufficient to provide for said paste; and
(b) mixing said combined reactants and setting fluid for a sufficient
period of time to produce a paste capable of setting into a calcium phosphate
5 containing product.

10 16. The method according to Claim 15, wherein said setting fluid comprises
said osteoclastogenic agent.

17. The method according to Claim 15, wherein said dry reactants comprise
said osteoclastogenic agent.

15 18. The method according to Claim 15, wherein said osteoclastogenic agent
comprises a ligand for RANK.

19. The method according to Claim 15, wherein said ligand is a RANKL
polypeptide or mimetic thereof.

20 20. The method according to Claim 15, wherein said setting fluid is a solution
of a soluble silicate.

21. The method according to Claim 15, wherein said flowable composition
sets into said calcium phosphate containing product in a period of time ranging
25 from about 5 to 10 minutes.

22. The method according to Claim 15, wherein said calcium phosphate
containing product has a compressive strength ranging from about 25 to 100
MPa.

30

23. A flowable composition that sets into a calcium phosphate containing product, wherein said composition comprises an osteoclastogenic agent.

24. A method of repairing a hard tissue defect, said method comprising:
5 applying to the site of said defect a flowable composition according to Claim 23.

25. A kit for use in a preparing a flowable composition that sets in an in vivo fluid environment into a calcium phosphate product, said kit comprising:

- 10 (a) dry reactants comprising a calcium source and a phosphate source;
(b) a setting fluid or components for producing the same; and
(c) an osteoclastogenic agent.

26. A packaged calcium phosphate cement, said packaged cement
15 comprising:

a tubular element separated into a first compartment and at least one additional compartment by a removable barrier;

- (i) dry reactants comprising a source of calcium and phosphate present in said first compartment;
20 (ii) a setting fluid or components thereof present in said at least one additional compartment; and
(iii) an osteoclastogenic agent present in either said first compartment, said at least one additional compartment or in a second additional compartment;.

25

27. The packaged calcium phosphate cement according to Claim 26, wherein said removable barrier is a clip.

28. The packaged calcium phosphate cement according to Claim 26, wherein
30 said removable barrier is a frangible barrier.

29. The packaged calcium phosphate cement according to Claim 26, wherein said setting fluid is a solution of a soluble silicate.

5